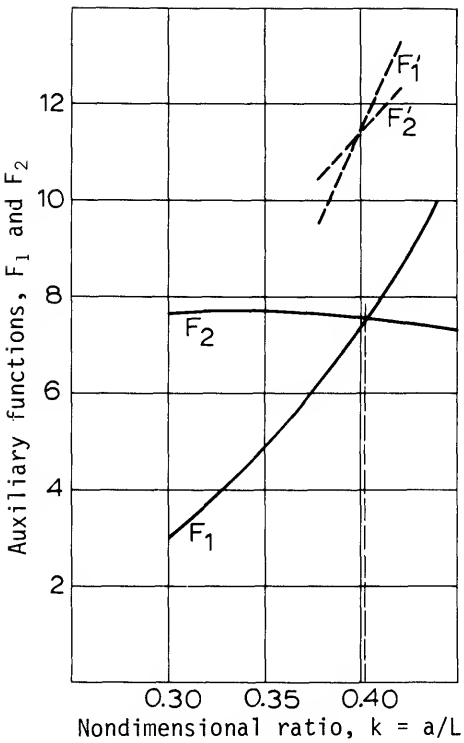

Fig. 22.2 Example of graphical solution for $\Delta_A = \Delta_C$, case 1, Table 22.4.

the solution is easily obtained, as shown in Fig. 22.2. The choice of F_1 and F_2 is, of course, largely arbitrary as long as $F_1 - F_2 = 0$. For example, $F_1 = 48k^4 - 5$ and $F_2 = 96k^3 + 24k^2 - 16k = 4k(24k^2 + 6k - 4)$ should give essentially the same result within the reading accuracy of the graph. The character of the intersecting curves may be different from those shown in Fig. 22.2. To illustrate this point further, take the functions

$$F_1' = 24k^2(2k^2 + 4k + 1)$$
$$F_2' = 16k + 5$$

so that

$$F_1' - F_2' = 0$$

Substituting for k from Fig. 22.2 into the straight-line relationship, we get

$$F_2' = 16 \times 0.402 + 5 = 11.43$$

Similarly, utilizing the expression for F_1' gives

$$24 \times 0.402 \times 0.402(2 \times 0.402 \times 0.402 + 4 \times 0.402 + 1) = 11.43$$